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ALABAMA

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ENGINEERING EXTENSION SERVICE

CIVIL DEFENSE PROFESSIONAL ADVISORY CENTER

Birmingham, Alabama
Telephone 252-1107 (205)

August 9, 1973

Address reply to:
City Hall Annex—E.O.C.
Birmingham, Alabama 35203

Mr. Joseph E. Minor, P.E.
Department of Civil Engineering
Texas Technical University
Lubbock, Texas 79409

Dear Joe:

Enclosed are the slides of the Georgia school that was hit by a tornado in November of 1971. Slides 1, 2, & 3 shows the damage incurred by a wooden gymnasium. Observations at the site indicate little or no engineering effort was involved in the design of this structure. Slide 4 shows the wind shielding effect of one building on another. In this case, the gymnasium shielded the small concrete block building in the foreground. The concrete block building suffered minor roof damage as the result of missiles penetrating the rather light weight roof.

The interaction of wind and chimneys are shown by slides 5, 6 and 7. Slide 6 shows the chimney failure occurring at roof level. It is interesting to note in slide 5 that the window failures all occurred from the outside to the inside. Slides 8 and 9 indicate a typical roof failure as the tornado winds moved across the roof. Slides 10, 11, 12, 13, 14, and 15 clearly show the effect of a window failure and the effects of this failure on other parts of the structure. Slides 11, 12 shows the position of the window frame after the storm passed. (Note the window frame in slide 11 to be almost intact) Slide 13 shows a 3" deflection of the ceiling and center of the adjacent classroom partition. The least deflection occurred in the corridor wall as the result of venting through the door and transoms. The opposite side of the classroom partition is shown in slide 15, note the bow in the wall and the 2" x 6" top plate wedged between the partition and ceiling. Slide 16 is a picture of corridor of the same building, while 17 is of an adjacent classroom building that did not contain corridors.

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I estimate the winds in the vicinity of the school to be less than 125 mph with the diameter of the storm being approximately 250 feet.

I enjoyed discussing the environmental hazard survey form with you and hope my comments were of some value to you. Maybe sometime in the near future, we can get together to discuss our efforts in this area.

Sincerely,


Billy R. Manning, P.E.
Director

BRM/lcc
Encl.